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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,219	03/02/2004	Lois Weisman	IOWA:048US	3887

7590 02/17/2009  
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EXAMINER
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LIU, SAMUEL W

ART UNIT	PAPER NUMBER
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1656

MAIL DATE	DELIVERY MODE
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02/17/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/791,219	<b>Applicant(s)</b> WEISMAN, LOIS	
	<b>Examiner</b> SAMUEL W. LIU	<b>Art Unit</b> 1656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 18 and 19 is/are pending in the application.
- 4a) Of the above claim(s) none is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 March 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### *Status of the claims*

Claims 18-19 are pending.

The amendment filed 11/25/08 which cancels claims 1-17 and 20-60 has been entered. The applicant's request for extension of time of three months has been entered. Claims 18-19 are examined in this Office action.

### *Withdrawal of claim rejection*

The 103 rejection of claims 24-25 by Drmanac et al. is withdrawn in light of cancellation of claims 24-25.

### ***New-Claim Rejections - 35 USC §103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

[1] Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mintz et al. (US 2007/0083334A1).

Mintz et al. teach polypeptides encoded by the transcripts (mRNAs) of the disclosed invention (see [6988], and also see the amino acid sequence alignment set forth in "attachment I"). The alignment shows 99% sequence identity of SEQ ID NO:886520 to instant SEQ ID NO:3 polypeptide with one mismatch, i.e., amino acid residue 654 "Ala" (the Mintz's polypeptide) versus "Val" (instant SEQ ID NO:3) (instant claim 18).

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Mintz et al. teach a fusion protein wherein the disclosed polypeptide is fused with hexahistidine tag (see [0291]) (instant claim 19).

It would have been obvious for the ordinary artisan to make the polypeptide which retains identical biological function of the instant SEQ ID NO:3 with substitution at conservative amino acid residue(s), e.g., residue 654 substitution of Val by Ala to arrive at the instant invention. Obtaining a protein of identical function with said conservative substitution by protein engineering is within (not beyond) the skill of a biochemist of ordinary skill in the art as well as has reasonable expectation of success. Therefore, the claimed invention was *prima facie* obvious to make and use the invention at the time it was made.

[2] Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nagase et al. (DNA Res. (1996) 3, 321-329).

Nagase et al. teach a polypeptide encoded by cDNA with gene number "KIAA0274" (see p.327, table 3, the third line from the bottom); this "KIAA0274" is the same as "synonyms =KIAA0274" of "GN" (gene number) shown in the "attachment II". The sequence alignment in "attachment II" shows 99% sequence identity of the polypeptide encoded by said "KIAA0274" to instant SEQ ID NO:3 polypeptide with one mismatch, i.e., amino acid residue 654 "Ala" (the "KIAA0274" encoded polypeptide) versus "Val" (instant SEQ ID NO:3).

It would have been obvious for the ordinary artisan to make the polypeptide which retains identical biological function of the instant SEQ ID NO:3 with substitution at conservative amino acid residue(s), e.g., residue 654 substitution of Val by Ala to arrive at the instant invention. Obtaining a protein of identical function with said conservative substitution by protein

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engineering is within (not beyond) the skill of a biochemist of ordinary skill in the art as well as has reasonable expectation of success. Therefore, the claimed invention was *prima facie* obvious to make and use the invention at the time it was made.

[3] Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagase et al. (*DNA Res.* (1996) 3, 321-329), as applied to claim 18, further in view of Mintz et al. (US 2007/0083334A1).

The rejection of claim 18 has been set forth above.

Nagase et al. did not expressly teach fusion of the polypeptide encoded by cDNA of the gene number "KIAA0274" with a heterologous peptide (other than said polypeptide).

Mintz et al. teach a fusion protein wherein the disclosed polypeptide is fused with hexahistidine tag for facilitate purification of bacterially-expressed proteins or fused with a hemagglutinin tag to facilitate purification of proteins expressed in eukaryotic cells (see [0291]) (instant claim 19).

It would have been obvious for the ordinary skill in art of protein purification to attach affinity "tag" such as the His-tag or hemagglutinin tag in order to facilitate purification of the protein thereof. The purified protein would have been useful for further characterizing protein structure and/or function as this is within (not beyond) the skill of biochemist of ordinary skill in the art at the time instant invention was made. Therefore, combination of the above reference teachings as to fused affinity peptide tag renders claim 19 limitation *prima facie* obvious.

### ***Conclusion***

No claims are allowed.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel Wei Liu whose telephone number is 571-272-0949. The examiner can normally be reached from 9:00 a.m. to 5:00 p.m. on weekdays. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jon Weber, can be reached on (571) 272-0925. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

/Samuel W Liu/  
Examiner, Art Unit 1656  
February 10, 2009

/JON P WEBER/  
Supervisory Patent Examiner, Art Unit 1657